

Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

Manufacturer	ABB Electrification Sweden AB
Address	Motorgränd 20, Västerås, 72161, Sweden
Place of Production	ABB Xinhui Low Voltage Switchgear Co., Ltd. Jinguzhou Industrial Development Zone, Xinhui Dist., Jiangmen, 529100, China
Place of Production	ABB Electrification Sweden AB Motorgränd 20, Västerås, 72161, Sweden
Type	Contactors
Description	Three and four pole contactors AF-series Types: AF116-30 / AF116-40 AF140-30 / AF140-40 AF146-30 AF190-30 / AF190-40 AF205-30 / AF205-40 AF265-30 / AF265-40 AF305-30 / AF305-40 AF370-30 / AF370-40
Trade Name	AF116, AF140, AF146, AF190, AF205, AF265, AF305, AF370

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Application	Marine and offshore applications in category ENV1, ENV2 and ENV3 as defined in Lloyd's Register's Type Approval System, Test Specification Number 1 – 2013.
Specified Standard	Manufacturer's specification IACS E10 Rev. 7 - 2018
Ratings	<p>AF116-30 to AF370-30 Rated operational voltage (Ue): 440 – 1000 V Rated Frequency: 50/60 Hz Rated operational current AC-1 (Ie): 160 – 600 A (690 V / 40 °C) Rated operational current AC-3 (Ie): 116 – 370 A (440 V / 60 °C)</p> <p>AF116-40 to AF370-40 Rated operational voltage (Ue): 440 – 1000 V Rated Frequency: 50/60 Hz Rated operational current AC-1 (Ie): 160 – 525 A (690 V / 40 °C) Rated operational current AC-3 (Ie): 116 – 370 A (440 V / 60 °C)</p> <p>Software version PLC-Control: 2.1.x</p> <p>For detailed ratings, pls. refer to appendix.</p>
Additional Tests	Low temperature test: -15 °C / 16 h (AFxxx-30 only) Low temperature test: -25 °C / 16 h (for AF116-30, AF190-30, AF265-30)
Other Conditions	Manufacturer's derating table is to be observed. Ventilation arrangement is to be arranged as per manufacturer's instructions.

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This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid Certificate.

The Design Appraisal Document No. HTS/ETS 40456-20/MK/TW and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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Appendix

DESCRIPTION

Three und four pole contractors

Types: AF116-30, AF116-40
 AF140-30, AF140-40
 AF146-30
 AF190-30, AF190-40
 AF205-30, AF205-40
 AF265-30, AF265-40
 AF305-30, AF305-40
 AF370-30, AF370-40

RATINGS

Rated making capacity AC-3: 10 x I_e AC-3 acc. to IEC 60947-4-1
 Rated breaking capacity AC-3: 8 x I_e AC-3 acc. to IEC 60947-4-1
 Supply voltage codes: Code 11: U_s = 24-60 V AC / 20-60 VDC
 Code 12: U_s = 48-130 V AC / DC
 Code 13: U_s = 100-250 V AC / DC
 Code 14: U_s = 250-500 V AC / DC
 Code 31: U_s = 24-60 V AC / 20-60 VDC (PLC-control)
 Code 32: U_s = 48-130 V AC / DC (PLC-control)
 Code 33: U_s = 100-250 V AC / DC (PLC-control)
 Code 34: U_s = 250-500 V AC / DC (PLC-control)

AF116 ... AF370 3-pole contactors

Utilization [V]	I _e [A]	Ambient temperature [°C]
AF116-30		
AC-3: 1000	-	-
AC-3: 690	65	60
AC-3: 440	116	60
AC-1: 690	160	40
AF140-30		
AC-3: 1000	-	-
AC-3: 690	80	60
AC-3: 440	140	60
AC-1: 690	200	40
AF146-30		
AC-3: 1000	60	60
AC-3: 690	93	60
AC-3: 440	146	60
AC-1: 1000	225	40

AF116 ... AF370 4-pole contactors

Utilization [V]	I _e [A]	Ambient temperature [°C]
AF116-40		
AC-3: 1000	-	-
AC-3: 690	-	-
AC-3: 440	116	60
AC-1: 690	145	60
AC-1: 690	160	40
AF140-40		
AC-3: 1000	-	-
AC-3: 690	-	-
AC-3: 440	140	60
AC-1: 690	175	60
AC-1: 690	200	40
AF146-40		
AC-3: 1000	-	-
AC-3: 690	-	-
AC-3: 440	-	-
AC-1: 690	-	-

RATINGS (continued)

AF116 ... AF370 3-pole contactors

Utilization [V]	Ie [A]	Ambient temperature [°C]
AF190-30		
AC-3: 1000	85	60
AC-3: 690	135	60
AC-3: 440	190	60
AC-1: 1000	250	40
AC-1: 690	275	40
AF205-30		
AC-3: 1000	100	60
AC-3: 690	165	60
AC-3: 440	205	60
AC-1: 1000	275	40
AC-1: 690	350	40
AF265-30		
AC-3: 1000	113	60
AC-3: 690	250	60
AC-3: 440	265	60
AC-1: 1000	350	40
AC-1: 690	400	40
AF305-30		
AC-3: 1000	131	60
AC-3: 690	290	60
AC-3: 440	305	60
AC-1: 1000	375	40
AC-1: 690	500	40
AF370-30		
AC-3: 1000	141	60
AC-3: 690	315	60
AC-3: 440	370	60
AC-1: 1000	400	40
AC-1: 690	600	40

AF116 ... AF370 4-pole contactors

Utilization [V]	Ie [A]	Ambient temperature [°C]
AF190-40		
AC-3: 1000	-	-
AC-3: 690	-	-
AC-3: 440	190	60
AC-1: 1000	250	40
AC-1: 690	250	60
AC-1: 690	275	40
AF205-40		
AC-3: 1000	-	-
AC-3: 690	-	-
AC-3: 440	205	60
AC-1: 1000	275	40
AC-1: 690	300	60
AC-1: 690	350	40
AF265-40		
AC-3: 1000	-	-
AC-3: 690	-	-
AC-3: 440	265	60
AC-1: 1000	350	40
AC-1: 690	350	60
AC-1: 690	400	40
AF305-40		
AC-3: 1000	-	-
AC-3: 690	-	-
AC-3: 440	305	60
AC-1: 1000	375	40
AC-1: 690	400	60
AC-1: 690	500	40
AF370-40		
AC-3: 1000	-	-
AC-3: 690	-	-
AC-3: 440	370	60
AC-1: 1000	400	40
AC-1: 690	425	60
AC-1: 690	525	40